REMARKS

In the June 10, 2003 Office Action, the Examiner noted that claims 1-17 were pending in the application; rejected claims 1-9, 11 and 15-17 under 35 U.S.C. § 102(b); and rejected claims 10 and 12-14 under 35 U.S.C. § 103(a). In rejecting the claims, U.S. Patents 4,945,475 to Bruffey et al.; 5,564,119 to Krawchuk et al.; 5,764,972 to Crouse et al.; 5,778,389 to Pruett et al.; and 6,018,744 to Mamiya et al. were cited. Claims 1-17 remain in the case. The Examiner's rejections are traversed below.

Drawings

In the Office Action Summary, box 10 was checked, but neither of boxes (a) or (b) were checked. Since there were no comments in the text of the Office Action nor any indication of drawing changes required by the Official Draftsman, it is assumed that box (a) should have been checked and that the drawings have been accepted. If this is not the case, the Examiner is respectfully requested to contact the undersigned by telephone to describe what drawing changes are required.

The Invention

The present invention is directed to managing files in a data processing system by assigning policy attribute data to a directory or to a subdirectory, such as by inheritance. For example, by setting a specific volume number in a directory as policy attribute data, the manager of a file system can designate the storing place of a file. Thus, a file that is accessed often can be stored on a disk having a high access speed and the access time of the file can be reduced accordingly. By setting the constraints of disk capacity as the policy attribute data of a directory, the disk capacity of a file within a specific directory can also be limited. Thus, control and statistical information of disk capacity to be used by a file and the total size of files within a directory can be managed. When a file is archived, preferably the policy attribute data is stored in a hidden file, so that when the file is restored, the hidden file can be read by the operating system and used to control how the file is restored.

The Prior Art

U.S. Patent 4,945,475 to Bruffey et al.

The Bruffey et al. patent is directed to a hierarchical file system that provides cataloging and retrieval of data using two "B-Tree" structures, one for the catalog and the other for the file

extents. In the embodiment illustrated in Fig. 6, the catalog is illustrated on the left using reference numerals 90-96, while the records on the right side of Fig. 6 is described as a memory or cataloging map 97. The highest level of information is directory record 100 for root directory 91 which includes a key 103 having a value 105 and name 106, and an information segment 104 which contains the directory's DirID value 107. A similar directory record 100 exists for subdirectory 92. In addition to the directory records 100, cataloging map 97 contains thread records 108, 109, each of which contains a key with only a DirID and an information segment 112 with the DirID of the parent directory and the name of the subdirectory. Finally, there are file records 101, each of which contains a key containing the DirID of the directory in which the file is located and the name of the file (see, e.g., key 113) and an information segment, e.g., 114, containing the data.

U.S. Patent 5,564,119 to Krawchuk et al.

The Krawchuk et al. patent is directed to storing and managing information in a data processing system. Columns 8-10 (up to line 35) describe conventional sequential and relational information systems and the drawbacks of each for contrast with the fractal information system disclosed by Krawchuk et al. In particular, the problems of inefficient use of space and processing of data are noted. However, nothing has been found in the description of Fig. 6 at column 10, lines 8-35 regarding enforcement of a file management policy.

U.S. Patent 5,764,972 to Crouse et al.

The Crouse et al. patent is directed to an archiving file system for data services in a distributed network environment. The second paragraph of the Summary of the Invention provides an overview of an archiving file system that stores "control information about ... remote files as part of an addressable control file that has space on the data server" (column 4, lines 49-50), including the set of "hierarchically selectable archival attributes and one or more archival blocks associated with each remote file that automatically control the manner in which that remote file will be stored and ultimately archived, or even removed from the network data server" (column 4, lines 53-58). This "allows for direct access to remote files which have been archived onto a long-term randomly positionable, removable secondary storage device without the need to first stage the archived file onto an online short-term direct access secondary storage device" (column 4, lines 62-66). In other words, the control information for an archived file is stored in a location that is accessible to the data server at all times, i.e., in the removable media resource file 194 (see, column 19, line 24 to column 20, line 39 and Fig. 9).

U.S. Patent 5,778,389 to Pruett et al.

The Pruett et al. patent is directed to synchronizing computer file directories, including hidden files, unless "a '/H' qualifier" is used. In synchronizing source and target files, the attributes of the file are checked, including not only the "hidden" flag, but also the "archive" flag (see column 7, lines 28-41). These are the only mentions in Pruett et al. of hidden files and archiving.

U.S. Patent 6,018,744 to Mamiya et al.

The Mamiya et al. patent is directed to managing data, such as images, voice, characters, etc., in a unified manner. Files are stored with attributes, such as "read-only" and "hidden". The data management system disclosed by Mamiya et al. prevents data from being erroneously erased by other than a particular application by registering a path of registered data in an attribute file or attribute table.

Rejections under 35 U.S.C. § 102

In item 2 on pages 2-3 of the Office Action, claims 1-9, 11 and 15-17 were rejected under 35 U.S.C. § 102(b) as anticipated by Bruffey et al. As described above, the data structure taught by Bruffey et al. contains only directory identifiers and names. Nothing was cited or has been found suggesting storage of "attribute data indicating a policy on which file management is based" (e.g., claim 1, lines 3-4) corresponding to "path information of a directory" (e.g., claim 1, line 4). The only thing identified in the Office Action as corresponding to "policy attribute data" was "volume 2" (Office Action, page 2, line 10) in Fig. 6. The only volume Fig. 6 that has a "2" associated with it is the root directory 91. Nothing in Fig. 6 or the description thereof at column 6, line 15 to column 8, line 39 suggests the storage of any data as part of the root directory name and key or anywhere else that would indicate a policy on which file management is based. Since limitations similar to those discussed with respect to claim 1 are recited in claims 2 and 15-17, and claims 3-9 and 11 depend from claim 1 or claim 2, it is submitted that claims 1-9, 11 and 15-17 patentably distinguish over Bruffey et al. for the reasons discussed above.

In addition, claim 2 recites "assigning policy attribute data of a directory so as to be inherited to a subdirectory" (claim 2, lines 5-6) as an alternative to assigning specified policy attribute data to the subdirectory. Nothing was cited or found in Bruffey et al. regarding inheritance of policy attribute data by a subdirectory. Therefore, it is submitted that claim 2 and claims 7 and 8 which depend therefrom further patentably distinguish over Bruffey et al.

Rejections under 35 U.S.C. § 103

In item 4 on pages 3-4 of the Office Action, claim 10 was rejected under 35 U.S.C. § 103(a) as unpatentable over Bruffey et al. in view of Krawchuk et al. Nothing was cited or has been found in Krawchuk et al. suggesting storing of policy attribute data as defined in claim 1. Since claim 10 depends from claim 1, it is submitted that claim 10 patentably distinguishes over the combination of Bruffey et al. and Krawchuk et al. for the reasons discussed above with respect to claim 1.

Furthermore, it is not understood why the Examiner believes that Fig. 6 of Krawchuk et al. "discloses causing a file or directory which violated the policy to comply with the policy" (Office Action, page 4, lines 3-4). If Krawchuk et al. continues to be relied on for this teaching, an explanation is respectfully requested of why one of ordinary skill in the art would find Fig. 6 of Krawchuk et al. as requiring compliance with a policy.

In item 5 on page 4 of the Office Action, claim 12 was rejected under 35 U.S.C. § 103(a) as unpatentable over Bruffey et al. in view of Crouse et al. Nothing was cited or has been found in Crouse et al. suggesting modification of Bruffey et al. to include the storage of policy attribute data as defined in claim 1. Therefore, since claim 12 depends from claim 1, it is submitted that claim 12 patentably distinguishes over the combination of Bruffey et al. in view of Crouse et al. for the reasons discussed above with respect to claim 1. Furthermore, nothing was cited or has been found in Crouse et al. suggesting that "policy attribute data is stored in the archive file" (claim 12, last two lines). Therefore, it is submitted that claim 12 further patentably distinguishes over the combination of Bruffey et al. in view of Crouse et al.

In item 6 on pages 4-5 of the Office Action, claim 13 was rejected under 35 U.S.C. § 103(a) as unpatentable over Bruffey et al. in view of Crouse et al. and further in view of Pruett et al. However, nothing was cited or has been found in Pruett et al. suggesting modification of the teachings in Bruffey et al. and Crouse et al. to store policy attribute data as defined in claim 1 along with path information in "a hidden file in the archive file" (claim 13, line 2). As discussed above, Pruett et al. merely describes use of a flag to indicate whether a file is hidden. Therefore, it is submitted that claim 13 patentably distinguishes over Bruffey et al. in view of Crouse et al. and further in view of Pruett et al. for the reasons discussed above with respect to claims 1 and 12 and the additional limitations recited in claim 13.

In item 7 on page 5 of the Office Action, claim 14 was rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Bruffey et al., Crouse et al. and Pruett et al. and further in view of Mamiya et al. However, nothing was cited or has been found in Mamiya et al. sugges-

ting modification of the other references to meet the limitations recited in claims 1, 12 and 13. Furthermore, as discussed above, Mamiya et al. fails to teach or suggest retrieving policy attribute data as defined in claim 1 when a file is restored. Therefore, it is submitted that claim 14 patentably distinguishes over the combination of these four references for the reasons discussed above with respect to claim 1 in addition to the additional limitations recited in claim 14.

Summary

It is submitted that the cited references, taken individually or in combination, do not teach or suggest the features of the present claimed invention. Thus, it is submitted that claims 1-17 are in a condition suitable for allowance. Reconsideration of the claims and an early Notice of Allowance are earnestly solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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